

NAVAL WAR COLLEGE
Newport, R.I.

PRECISION GUIDED MUNITIONS AND THE ASYMMETRIC THREAT

by

Timothy B. Spratto
LCDR USN

A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: 

05 February 1999

Faculty Advisor

Signature:


D. K. N. Grant, CAPT USN

DISTRIBUTION STATEMENT A
Approved for Public Release
Distribution Unlimited

Security Classification This Page

REPORT DOCUMENTATION PAGE

1. Report Security Classification: UNCLASSIFIED			
2. Security Classification Authority:			
3. Declassification/Downgrading Schedule:			
4. Distribution/Availability of Report: DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.			
5. Name of Performing Organization: JOINT MILITARY OPERATIONS DEPARTMENT			
6. Office Symbol: C	7. Address: NAVAL WAR COLLEGE 686 CUSHING ROAD NEWPORT, RI 02841-1207		
8. Title: Precision Guided Munitions and The Asymmetric Threat (u)			
9. Personal Authors: LCDR Timothy B. Spratto, USN			
10. Type of Report: FINAL	11. Date of Report: 5		
12. Page Count: ■ 20			
13. Supplementary Notation: A paper submitted to the Faculty of the NWC in partial satisfaction of the requirements of the JMO Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.			
14. Ten key words that relate to your paper: Precision, Munitions, Asymmetric, technology, engagement, Joint, weapons, QDR, Iraq, terrorism			
15. Abstract: The Gulf War created the unrealistic expectation that precision guided munitions (PGMs) could win America's future wars. Since then U.S. civilian leaders have used them repeatedly while pursuing U.S. interests. Joint Vision 2010 (JV 2010) is the base document guiding U.S. military forces into the next century and its key concepts of precision engagement is focused on employing PGMs. JV 2010 envisions a high technology battlefield where PGMs will decisive. JV 2010 recognizes the emerging threat of "asymmetric warfare" but fails to see that this threat is not likely to be defeated with PGMs. PGMs are effective tactical weapons but using them to achieve strategic aims against asymmetric threats is failing. It is the responsibility of the operational commander to ensure the tactical weapons are part of an operational plan, not the whole plan. Additionally, a document as influential as JV 2010 is required to refocus military planning efforts for the 21 st century.			
16. Distribution / Availability of Abstract:	Unclassified X	Same As Rpt	DTIC Users
17. Abstract Security Classification: UNCLASSIFIED			
18. Name of Responsible Individual: CHAIRMAN, JOINT MILITARY OPERATIONS DEPARTMENT			
19. Telephone: 841-6461	20. Office Symbol:	C	

Security Classification of This Page Unclassified

The spectacular success of the well-choreographed Desert Storm air campaign held out promise that [precision] strike weapons such as the Tomahawk and F-117 could become the war deterrents of the post-nuclear era.

CDR Sam J. Tangredi, USN, Proceedings

Many believe that precision strike weapons can win all future wars.

General Dennis J. Reimer, USA, Joint Force Quarterly

A belief in the all-powerful nature of high-tech weapons and long-range bombardment is wonderfully appealing to contemporary Americans. It both flatters their justified pride in American technology and suggests the possibility of repeated victories, without risk of serious casualties.

Anatol Lieven, Armed Forces Journal International

There are many diverse opinions in the United States with respect to the proper emphasis to be placed on the development of high-technology military equipment and its application and potential benefits on future battlefields. The advanced technology equipment pursued by the U.S. military that appeal most to America's high technology oriented society are the precision guided munitions (PGMs). On 18 January 1991 PGMs burst into America's consciousness as the allied air commander for Desert Storm, Lieutenant General Charles Horner, showed video clips on national television of laser-guided bombs flying through doorways and into ventilation trunks of Iraqi command and storage facilities. The lexicon of these "smart" weapons came into every day use; laser-guided bombs, Tomahawk Land Attack Missiles (TLAMs) and accuracy measured in plus or minus a few feet of the intended target were now discussed by average Americans. The promise of these new weapons was clear: that American technological

19990520 051

superiority would enable the United States to deter or win wars from long-range, with relatively low risk to friendly forces and with little impact on "innocent" enemy civilian populations.

These new weapons appeared to be just what the United States needed once the Cold War ended and the Soviet threat was diminished. The remaining Cold War nuclear arsenal held little promise as a deterrent against emerging threats to American interests. PGMs offered an application of conventional military force that appeared to be the technological answer to America's "...reluctance to commit forces for long periods of time, aversion to taking casualties, fear of collateral damage and sensitivity to world and domestic opinion."¹

PGMs have indeed become the weapon of choice for our political and military leaders, and Americans accept their use as a justifiable application of military force to protect U.S. interests and project influence. Whether against Iraq, Bosnia, or Osama Bin Laden's "infrastructure of terrorism,"² PGMs are the weapons employed first, and with them Americans expect to win wars quickly and painlessly.³ These high expectations along with the willingness to use PGMs frequently, has resulted in U.S. military leaders placing great emphasis on these weapons for future operations. Consequently, military planning has become focused on the tactical employment of this particular weapon in an attempt to achieve strategic objectives. While PGMs are effective tactical weapons, these tactics should be part of an operational plan that is itself based on strategy.

Operational commanders will be hard pressed to achieve strategic objectives if they must rely on PGMs as the only acceptable form of military power the U.S. is prepared to use. This is especially true in light of the growing concern among U.S. leaders regarding the threat of "asymmetric warfare." The particularly challenging nature of this type of warfare will require

innovative operational planning, not just favorite weapons, if America is to project global influence.

Tomorrow's Adversary

The only thing one can safely say about any likely near-term (in the next decade) adversaries to the United States is that they will not be peer competitors to the United States in size, or technical prowess of their military forces. If "the United States is the only country with both global interests and the ability to protect them,"⁴ who are we likely to confront in the pursuit of our national interests or even the defense of America itself? A common theme among those attempting to answer this question is to reminisce about the familiar bipolar world of the past half century, when threats to the nation could be framed in terms of U.S.- Soviet competition.⁵ Although war with the Soviets was avoided, U.S. military forces were not idle, and there are lessons to be learned from their activities during the Cold War era.

Instead of Soviet forces the U.S. military faced a myriad of adversaries from across the globe. American military forces engaged in combat across the spectrum of armed conflict, against opponents who were numerically and technologically inferior. From large-scale combat operations in Vietnam, to the invasions of Panama and Grenada, to peacekeeping in Lebanon, military force was employed to assert U.S. influence and protect American interests. This range of military operations was characterized as counter-insurgencies, guerrilla wars, nation building, peacemaking and counter-terrorism. Since the Gulf War, the United States has continued to face many similar challenges including interventions in Somalia, Bosnia, and Haiti, and in the declared "wars" on both drugs and terrorism. The Gulf War itself was an anomaly in that American forces fought a Soviet-style army in the type of conventional warfare they had trained

for throughout the Cold War. Aside from the Gulf War, the modern term “asymmetric warfare” is often applied to the types of military operations that have kept American forces occupied since WWII.

Asymmetric warfare is a term that means different things to different people. For the purposes of this paper, asymmetric warfare is the employment of a different type, arrangement or approach to using military forces in relation to the enemy’s military operations. It covers the range of conceivable responses to the use of military force including a passive non-response, to a rapid escalation of the conflict using weapons of mass destruction (WMD). In addition to WMD, asymmetric warfare techniques of greatest concern include terrorist acts aimed at Americans abroad and at home, disruption of our information systems, and the enemy’s use of complex terrain such as urban areas. A recent example of the possibilities of asymmetric warfare is the 1996 victory of Chechen rebels over the Russian army⁶ in which “...a semi-trained and poorly equipped force successfully waged a war of attrition that eventually wore down the larger, technologically superior Russian army.”⁷ Examples of asymmetric warfare like the Russian experience in Chechnya, and the growing threat it poses to U.S. security is on the mind of policy makers.

Joint Vision 2010 (JV 2010) states, “our most vexing future adversary may be one who can use technology to make rapid improvements in its military capabilities that provide asymmetrical counters to U.S. military strengths...,” that our future adversaries will “desire to avoid our strengths and exploit our vulnerabilities.”⁸ Since 1997 the Quadrennial Defense Review (QDR), the Secretary of Defense and the policy of the current Chairman of the Joint Chiefs of Staff (CJCS) have each endorsed JV 2010 as the basic document guiding our military forces into the next century.⁹ The President’s National Security Strategy for a New Century warns that:

...the United States must plan and prepare to fight and win under conditions where an adversary may use asymmetric means against us –unconventional approaches that avoid or undermine our strengths while exploiting our vulnerabilities. This is of particular importance and a significant challenge. Because of our dominance in the conventional military arena, adversaries who challenge the United States are likely to do so using asymmetric means, such as WMD, information operations or terrorism.¹⁰

This security strategy in combination with its derivative the National Military Strategy and JV 2010 establish priorities for U.S. military procurement, force structure and doctrine. Each document clearly addresses adversaries who pose asymmetric threats.

Some of the adversaries who pose this type of threat to the United States and are of greatest concern to policy makers include international terrorist organizations, trans-national criminal enterprises, and rogue states with leaders who desire to gain regional hegemony.¹¹ These adversaries currently threaten United States national security, and they are multiplying.¹² If the expanding threat of asymmetric warfare by these diverse adversaries is a serious concern for U.S. security and interests, then how do the key documents cited above propose to address it with military force? As argued above, JV 2010 is the cornerstone for future U.S. military planning and it advocates the new concept of precision engagement as the way military force will be used to take the fight to the enemy.

Precision Engagement

Long-range precision capability, combined with a wide range of delivery systems, is emerging as a key factor in future warfare. Technological advances will continue the trend toward improved precision.

JV 2010

The basic tenant of JV 2010 is that advanced technology will dominate future U.S. conflicts.¹³ To ensure that the United States retains the lead in advanced technology is thus of supreme importance. JV 2010 envisions a high technology force capable of "Full Spectrum Dominance" on the battlefield. This dominance will be achieved by developing four key operational concepts or capabilities: dominant maneuver, precision engagement, full dimension protection and focused logistics. JV 2010 further proposes that the impact of high technology will be most important for precision engagement.¹⁴

The term precision engagement captures the primary attributes U.S. military forces will require to effectively engage the enemy on future battlefields. To accomplish precision engagement JV 2010 envisions a high technology "...system of systems that enables our forces to locate the objective or target, provide responsive command and control, generate the desired effect, assess our level of success and retain the flexibility to reengage with precision when required." JV 2010 then goes on to say that "precision engagement will build on current advantages in delivery accuracy..." and emphasizes "discriminate weapon strikes" and "precise, all weather stand-off capability."¹⁵ If precision engagement is how future forces will take the fight to the enemy, then the blows in that fight will be delivered by PGMs.

That PGMs are to be the centerpiece of our high technology arsenal is clearly evident in the Department of Defense's 1999 budget with its stated support for "...the QDR's [and thus JV 2010's] emphasis on munitions of superior precision," and the list it provides of several precision guided strike weapons for which "substantial funding" is allocated.¹⁶ With PGMs destined to become the focus of the U.S. military's weapons procurement program, their employment could dominate doctrine development, training and planning efforts. Evidence that political and military leaders and most Americans feel that PGMs are the primary military force to be used to

assert U.S. influence around the world includes numerous uses since the Gulf War; airstrikes using PGMs, including Tomahawk missiles, have been the first threats to compel U.S. adversaries to do what America wants. In the summer of 1995 in Bosnia, in August 1998 against the terrorist network of Osama Bin Laden, and most recently in Operation Desert Fox in Iraq, PGMs were the first weapons employed in assert U.S. influence. In the latter two cases PGMs were the sole use of military force; the results they achieved were dubious at best, at worst the strikes were both strategically incoherent and a significant waste of resources.¹⁷ If PGMs are both the military force of choice and are the focus of procurement and planning, how effective will they be against the threat of asymmetric warfare?

Tactical Advantages and Disadvantages of PGMs

Tactically PGMs share many of the advantages that are generally ascribed to airpower, plus some unique ones.¹⁸ PGMs, especially cruise missiles, can quickly strike deep into the battlefield, with low risk to friendly forces. They are particularly effective against fixed pinpoint targets such as bridges, communications facilities, and electrical power generating plants. They can destroy or shutdown these targets with a fraction of the ordnance and sorties required when using non-precision weapons.¹⁹ They also bring the fight to the enemy, attriting their assets while friendly forces remain largely unengaged. Finally, the destruction or disabling of many of the targets they are designed to hit, such has command and control facilities, could have strategic implications.

Many of the disadvantages of PGMs, like the advantages, resemble those of air power. PGMs can destroy facilities and forces but they do not occupy or hold enemy territory, and their effects are by nature transitory, as attacks are of relatively short duration. Along with these

traditional disadvantages of air power, PGMs have some of their own. Targeting these munitions is extremely difficult because the weapons require precise information in both time and space. The target must be identified, its precise location known, and it must be at that precise location when the munition arrives; any errors in this process and the PGM is not used effectively. Additionally, PGMs are an order of magnitude more expensive than non-precision munitions, thus the quantities available for use are limited.²⁰ Finally, the expectation that PGMs will always hit their intended target has been exaggerated by the military and the civilian media coverage both during and after the Gulf War.²¹ The impression that they have an “unerring aim” is even shared by American adversaries, as evident when Iraqi citizens went about their daily business during Operation Desert Fox, confident that U.S. PGMs would accurately hit “military targets” as advertised.²²

PGMs and the Asymmetric Threat

*When other world actors play by our rules, we triumph.
Increasingly however, the world doesn't give a damn about our
laws, customs or table manners.*

Major Ralph Peters, USA, Parameters

...war consists of a continuous interaction of opposites.

Carl Von Clausewitz, On War

How will the advantages and disadvantages of PGMs effect their performance against asymmetric threats? Some of the primary characteristics of adversaries whom we expect to use

asymmetric warfare are precisely what make employing PGMs difficult. It is often hard to determine what assets and forces an asymmetric adversary possesses, and locating them in both time and space is difficult. Osama Bin Laden's whereabouts and his organization's training areas are difficult to target and locate for these very reasons. Even large mobile missile launchers, such as Iraq's Scud Transporter-Erector-Launchers, present a significant locating problem. As an example, during the Gulf War the allied coalition spent a significant amount of time and resources pursuing Scud launchers, the U.S. Air Force alone flew over 4000 "Scud hunting" missions, yet achieved few tangible results.²³ Even if accurate targeting data can be obtained for these mobile targets, questions of territorial sovereignty can become a major issue; terrorists and international criminals reside in sovereign countries, presenting international legal and diplomatic issues to complicate attacking them. WMD bring up a particularly insidious problem. Targeting and hitting WMD stockpiles raises a risk that biological, chemical or radioactive materials may be released into the environment, causing unwanted collateral civilian casualties. During Operation Desert Fox PGM attacks against WMD sites were not conducted for this very reason.²⁴

From the brief discussion above it is not hard to imagine a myriad of ways an adversary could seek to disrupt the targeting or prevent the use of PGMs. However, it may also be advantageous, and require less effort, for an adversary to hide his targets right on "the battlefield." For instance, co-locating targets with civilian facilities can take advantage of the U.S. aversion to civilian casualties. Additionally, an adversary could essentially do nothing, counting that once the U.S. has expended its PGMs and yet failed to achieve its objectives, Americans would show a lack of resolve to pursue other alternatives. Since the Gulf War, Iraq has employed this "do nothing" strategy against repeated U.S. PGM attacks believing, as the

Iraqi Defense Minister stated in December 1998, if they "hold tight," the "Americans will go away."²⁵ This simple "do nothing" strategy could be effective if complimented by a propaganda campaign to win international support against the United States as the perpetrator of aggression.

All these proposed strategies and tactics suggest that operational employment of asymmetric warfare presents a particularly challenging problem for using PGMs, especially if U.S. leaders continue to expect these tactical weapons to accomplish the task alone.

An Alternative Path

At present, we are preparing for the war we want to fight someday, not for the conflicts we cannot avoid.

Major Ralph Peters, USA, Parameters

Since asymmetric threats are what the United States is certain to confront in the next decade and the current use of PGMs will not be effective against them, how should civilian and military leaders and operational commanders alter the courses they are pursuing? This paper proposes a two-fold resolution to this issue, one for the leaders who are directing military forces into the next century and one for the operational commander who must deal with the present.

A New Vision

Instead of procuring a PGM-dominated arsenal and then force-fitting national security strategy and military tactics to its use, U.S. civilian and military leaders need to develop a coherent strategy to oppose asymmetric threats confronting the nation. Once the strategy is in

place, then procure the weapons necessary to achieve it. Presently JV 2010 is the vision guiding the U.S. military into the next century, another document just as influential is required to adequately address the asymmetric threats presently confronting the United States. This new evolving document must refocus planning, doctrine and training towards a more balanced approach to the use of military power, away from the glamour of advanced technology gadgets and weapons. It should realistically consider that the full range of military options, including well-trained troops fighting on the ground, might be required to achieve strategic objectives. A broader vision of war fighting will drive the use of military force away from the hollow promise of PGMs and will provide the operational commander the flexibility to use all the possible military options to support strategy.

Operational Planning

At the operational level of war, the military commander recognizes that a well-conceived plan is still essential to achievement of national objectives. Although U.S. civilian leaders pursuing these objectives seem determined to constrain military commanders to nearly exclusive use of PGMs, planning at the operational level must not be restrained. The commander's estimate of the situation and operational plan must consider the full range of military responses, especially when tasked with planning for an asymmetric threat. The unpredictable nature of this threat requires an innovative approach. Planners must seek ways to leverage the advantages of PGMs against the asymmetric adversary in their plans and not make PGMs the focus of the entire plan.

PGMs do have a role against asymmetric adversaries but it is an attack against their critical vulnerabilities as part of an overall plan is the key to their effective use. Just destroying targetable facilities and equipment is not likely to achieve U.S. goals, but combined with other applications of military and national power it can make a significant contribution to an operation. The basic elements of operational planning including the analysis of space, force and time, and identification of centers of gravity and critical weaknesses will reveal that the asymmetric adversary is an elusive challenge. The plan for this adversary, and its branches and sequels, must be well conceived and may require other forms of military force. Even if constrained initially to using PGMs, the operational commander must have a comprehensive plan, generated by good operational analysis, to ensure they will be ready to answer the question "What's Next?" when the PGMs fail to achieve U.S. objectives

Conclusion

...the enduring legacy of the Gulf War is the expectation for a quick victory with few casualties.

Major General Robert H. Scales, USA,
Armed Forces Journal International

In a final assessment perhaps the Vietnam experience did more than the Gulf War to prepare the United States for future warfare. The Vietminh were an asymmetric enemy in every sense of the term; they had no front line, operated in complex terrain, and had few precision targets. Americans ended up rooting around in the jungles of Southeast Asia for over ten years without defeating the Vietnamese and yet suffered over 50,000 killed in action. By contrast Iraq was the type of adversary that U.S. forces and force structure had been designed to defeat. The

"strategic air campaign" of Desert Storm followed by 100 hours of decisive ground combat gave Americans an assurance that even with the decline of the Soviet Union wars would be nice and tidy; casualties would be measured in the hundreds. The news conferences with video tapes of PGMs striking pinpoint targets made celebrities of our military leaders and gave the public the false impression that PGMs were the decisive factor, even though they accounted for less than eight percent of the bomb tonnage expended.²⁶

The legacy of the Gulf War is a false promise indeed. The world continues to be full of adversaries with their own ambitions and little interest in peace, harmony and the American way of life. These adversaries watched the same Gulf War news briefings that Americans saw and took the lessons on board. These adversaries will not emulate Saddam Hussien's strategy but will more likely look at the Vietminh's asymmetric operations that thwarted America's clear military strengths.

It appears that current U.S. policy makers and military leaders have been lured by visions of easy victories. JV 2010, the document shaping our military for the 21st century, is firmly rooted in the lure of high technology. JV 2010's centerpiece, precision engagement, is dominated by PGMs. The emphasis on this precision tactic drives U.S. strategy and handcuffs operational commanders. Just as PGMs failed to achieve U.S. objectives against Iraq and Osama Bin Laden, so they will fail to be the answer for the asymmetric threats the U.S. will be unable to avoid in the future. An entirely new vision with the influence of JV 2010 must be written to guide U.S. military planning for the next century, and it must be based on sound policy and strategy instead of tactical weapons and existing force structure. For their part, operational commanders must not limit their planning to the use of PGMs, even when civilian leaders believe they are the only option. A comprehensive plan with well-conceived branches and sequels is the only assurance

that a command's forces will be ready for the shifting threat of the asymmetric adversary. The current Commandant of the Marine Corps, General Charles Krulak, summed it up well in a 10 October 1997 speech to the National Press Club when he said, "...the next war will be asymmetrical in nature and may not allow us to bring the wonders or our technology to bear. Our enemy will not allow us to fight the son of Desert Storm, but force us to fight the step-son of Chechnya."

NOTES

1. General Dennis J. Reimer, USA, "Dominant Maneuver and Precision Engagement," Joint Force Quarterly, Winter 1996-97, 13.
2. Raymond Close, "Hard Target, We Can't Defeat Terrorism With Bombs and Bombast," The Washington Post, 30 August 1998, C1.
3. Reimer, 13.
4. Thomas G. Mahnken, "America's Next War," The Washington Quarterly, Summer 1993, 174.
5. David Shukman, Tomorrow's War: The Threat of High Technology Weapons (New York:Harcourt Brace & Company 1996), 2.
6. Anatol Lieven, "The World Turned Upside Down: Military Lessons of The Chechen War," Armed Forces Journal International, August 1998, 40-43.
7. Major General Robert H. Scales, USA, "The Indirect Approach, How U.S. Military Forces Can Avoid the Pitfalls of Future Urban Warfare," Armed Forces Journal International, October 1998, 69.
8. Chairman of the Joint Chiefs of Staff, Joint Vision 2010, Washington: Joint Staff, 1996.
9. William S. Cohen, "Report of the Quadrennial Defense Review," Joint Force Quarterly, Summer 1997, 9; General Henry H. Shelton, USA, "A Word From the Chairman," Joint Force Quarterly, Autumn/Winter 1997-98, 6.
10. President of the United States, A National Security Strategy For a New Century, Washington: The White House, May 1997, 12.
11. Ibid., 10-11.
12. Ibid.
13. JV 2010, 11.
14. Ibid.
15. Ibid., 21.

16. Assistant Secretary of Defense (Public Affairs), Department of Defense Budget for FY 1999, 2 February 1998, http://www.defenselink.mil/news/Feb1998/b02021998_bt026-98.html, (12 January 1999).
17. Close, C1; Senator John McCain, "The Situation in Iraq," Press Report Statement to the Senate Armed Services Committee, 28 January 1999.
18. Robert A. Pape, Bombing To Win (Ithaca, NY: Cornell University Press 1996), 314-5.
19. Pape, 213, 320; Shukman, 148.
20. Government Accounting Office, Operation Desert Storm: Evaluation of The Air Campaign (Washington:Report 06/12/97, GAO/NSIAD-97-134) Section 3.
21. Pape, 318-9; Reimer, 13.
22. "25 Iraqis Reported Killed in Air Strikes," The New York Times, 18 December 1998, A20:3.
23. Shukman, 124.
24. Steven Lee Myers, "Jets Said to Avoid Poison Gas Sites: Pentagon Said It Hit Military and Intelligence Targets," The New York Times, 18 December 1998, A19:1.
25. Pape, 321.
26. Shukman, 5.

Bibliography

Assistant Secretary of Defense (Public Affairs). Department of Defense Budget For FY 1999. 2 February 1998. http://defenselink.mil/news/Feb1998/b02021998_bt026-98.html, (12 January 1999)

Chairman of the Joint Chiefs of Staff. Joint Vision 2010, Washington: Joint Staff, 19 _____. National Military Strategy. Washington: Joint Staff, September 1997.

Close, Raymond. "Hard Target, We Can't defeat Terrorism With Bombs and Bombast." The Washington Post, 30 August 1998, C:1.

Cohen, William S. "Report of the Quadrennial Defense Review, The Secretary's Message." Joint Force Quarterly, Summer 1997, 8-14.

Courtier, Jim and Alvin H. Bernstein. "The QDR Process – An Alternative View." Joint Force Quarterly, Summer 1997, 20-26.

Digby, James. Precision-Guided Munitions. London: International Institute For Strategic Studies, Adelphi Papers 118, 1975.

Grau, Lester W. Desert Defense and Surviving PGMs: The New Russian View. Fort Leavenworth, KS: U.S. Army Foreign Military Studies Office, December 1994.

Hagen, Lawrence S. The Two Faces of Janus. Kingston, Ontario: Queen's University, Center For International Relations, 1977.

Hughes, Patrick M. A DIA Global Security Assessment. U.S. Senate, Armed Services Committee, 6 February 1997. <<http://www.defenselink.mil/speeches/1997/dil1217.html>> (12 January 1999).

"25 Iraqis Reported Killed in Air Strikes." The New York Times, 18 December 1998, A20.

Kaplan, Fred. "U.S. Bombs Not Much Smarter." Boston Globe, 20 February 1998, <<http://www.defenselink.mil/>>

Lieven, Anatol. "The World Turned Upside Down, Military Lessons of the Chechen War." Armed Forces Journal International, August 1998, 40-43.

_____. Chechnya: Tombstone of Russian Power. New Haven, CT:Yale University Press, 1998.

Mahnken, Thomas G. "America's Next War." The Washington Quarterly, Summer 1993, 171-184.

_____. Chechnya: Tombstone of Russian Power. New Haven, CT: Yale University Press, 1998.

McCain, John. "The Situation in Iraq." Press Release Statement to the Senate Armed Services Committee, 28 January 1999.

Myers, Steven Lee. "Jets Said To Avoid Poison Gas Sites: Pentagon Said It Hit Military and Intelligence Sites," The New York Times, 18 December, 1998, A19.

The National Defense Panel. "National Security in the 21st Century: The Challenge of Transformation." Joint Force Quarterly, Summer 1997, 15-19.

_____. Transforming Defense: National Security in the 21st Century Arlington, VA: Report of the National Defense Panel, December 1997.

Office of the Assistant Secretary for Defense (Public Affairs). News release, Department of Defense Budget for FY 1999, 2 February 1998,
<http://www.defenselink.mil/news/feb98/b02021998_bt026-98.html> (12 January 1998)

Pape, Robert A. Bombing To Win. Ithaca, NY: Cornell University Press, 1996.

Peters, Ralph. "Our Soldiers, Their Cities." U.S. Army War College Quarterly, Parameters, Spring, Spring 1996, 43-50.

The President of the United States. A National Security Strategy For a New Century. Washington: The White House, 1997.

_____. "After the Revolution." U.S. Army War College Quarterly, Parameters, Summer 1995, 7-14.

Reimer, Dennis J. "Dominant Maneuver and Precision Engagement." Joint Force Quarterly, Winter 1996-97, 13-16.

Roland, Alex. "The Technological Fix: Weapons and the Cost of War." U.S. Army War College, Annual Strategy Conference, April 1995.

Scales, Robert H. Jr. "The Indirect Approach, How U.S. Military Forces Can Avoid the Pitfalls of Future urban Warfare." Armed Forces Journal International, October 1998, 68-74.

Shelton, Henry H. "A Word from the New Chairman." Joint Force Quarterly, Autumn/Winter, 1997-98, 6-8.

Shukman, David. Tommorow's War: The Threat of High Technology Weapons. New York: Harcourt Brace & Company, 1996.

Tangredi, Sam J. "Are We Firing Tomahawks To Easily?" U.S. Naval Institute Proceedings, December 1996, 8-10.

Vickers, Michael G. and Steven M. Kosiak. The Quadrennial Defense Review: An Assessment. Washington: Center For Strategic and Budgetary Assessments, December 1997.